

**DYNAMICALLY CONTROLLABLE BIOLOGICAL/CHEMICAL
DETECTORS HAVING NANOSTRUCTURED SURFACES**

5 A biological/chemical detector is disclosed that is capable of manipulating liquids, such as reagent droplets, without relying on microchannels. In a first embodiment, fluid flow is passed through the detector, thus causing particles wholly or partially containing an illustrative chemical compound or biological species to be collected on the tips of

10 nanostructures in the detector. A droplet of liquid is moved across the tips of the nanostructures, thus absorbing the particles into the liquid. The droplet is caused to penetrate the nanostructures in a desired location, thus causing the chemical compound or biological species in said liquid droplet to come into contact with, for example, a reagent. In another embodiment, a fluid flow is

15 passed through the nanostructured surfaces of the detector such that the chemical compound and/or biological species are deposited between the nanoposts of a desired pixel. A droplet of liquid is moved across the surface to that desired pixel and is caused to penetrate the nanostructures of the pixel, thus contacting a reagent.